

WORKSHOP ON THE OSSA SUBORBITAL SCIENCE SOUNDING ROCKET PROGRAM

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SCIENCE COMMUNITY INTERFACE

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## **SCIENCE-COMMUNITY INTERFACES**

**UNIQUE ASPECTS OF SOUNDING ROCKET SCIENCE: WHY AND HOW DOES THE SCIENCE COMMUNITY USE THIS PROGRAM?**

**SELECTION PROCESS FOR SUBORBITAL SCIENTIFIC INVESTIGATIONS**

**OPERATIONAL CHARACTERISTICS OF SUBORBITAL SCIENCE INVESTIGATIONS**

**INTERFACES BETWEEN EXPERIMENTERS, NASA HEADQUARTERS AND THE RESPONSIBLE FIELD CENTER (GODDARD SPACE FLIGHT CENTER-WALLOPS FLIGHT FACILITY)**

## UNIQUE ASPECTS OF SOUNDING ROCKET SCIENCE

RELATIVELY SHORT TIME SPAN FROM EXPERIMENT APPROVAL TO FLIGHT

DIRECT, HANDS-ON EXPERIENCE IN INSTRUMENT DESIGN, FLIGHT HARDWARE, AND DATA ANALYSIS FOR GRADUATE STUDENTS AND YOUNG INVESTIGATORS

TEST BED FOR NEW TECHNOLOGY BEFORE COMMITTING TO LONG-TERM ORBITING SPACE FLIGHT

OPPORTUNITY FOR PRE-AND POST-FLIGHT CALIBRATION OF INSTRUMENTATION

OPPORTUNITY FOR "CAMPAIGNS" - GROUPS OF INVESTIGATIONS, FREQUENTLY COORDINATED SCIENTIFICALLY, THAT USE A COMMON LAUNCH LOCATION AND SUPPORT INFRASTRUCTURE

## SELECTION PROCESS FOR SUBORBITAL SCIENTIFIC INVESTIGATIONS

PROPOSALS ARE SUBMITTED TO NASA IN RESPONSE TO A NASA RESEARCH ANNOUNCEMENT (NRA)

PROPOSAL EVALUATION MANAGED BY THE APPROPRIATE OSSA SCIENCE BRANCH

SCIENTIFIC REVIEW BY DISCIPLINE SPECIALISTS IN THE AREA OF THE PROPOSAL

EVALUATION BASED ON:

INTRINSIC SCIENTIFIC AND TECHNICAL MERIT

RELEVANCE TO NASA'S PROGRAM OBJECTIVES AND BALANCE

COST

SELECTION MADE BY A DESIGNATED NASA OFFICIAL

## **OPERATIONAL CHARACTERISTICS OF SUBORBITAL SCIENCE INVESTIGATIONS**

### **EXAMPLES OF OPERATIONAL REQUESTS TO ACCOMPLISH SPECIFIC SCIENTIFIC OBSERVATIONS: TARGETED SCIENCE**

#### **TIMING OF LAUNCHES**

**UNANTICIPATED ASTRONOMICAL TARGETS (COMETS, SUPERNOVAE)**

**SPECIFIC SOLAR CONDITIONS (SOLAR ACTIVITY, TOTAL SOLAR ECLIPSE)**

**TRANSIENT MESOSPHERIC PHENOMENA (HIGH LATITUDE NOCTILUCENT CLOUDS)**

**TRANSIENT SOLAR-TERRESTRIAL PHENOMENA (AURORAE)**

**CALIBRATION UP-DATES OF ORBITING INSTRUMENTATION**

#### **LAUNCH SITE SELECTION**

**SITE SELECTION MAY BE BASED ON ACCESS TO PHENOMENA**

**(SOUTHERN HEMISPHERE - SUPERNOVA 1987A)**

**(HIGH LATITUDE NORTHERN HEMISPHERE - NOCTILUCENT CLOUDS)**

**COORDINATION WITH GROUND-BASED FACILITIES**

## **EXAMPLES OF OPERATIONAL REQUESTS (CONT.)**

### **TRAJECTORY SELECTION**

**EXTREME ULTRAVIOLET SOLAR OBSERVATIONS REQUIRING HIGH ALTITUDE  
(H > 200 KM) TO MINIMIZE ATMOSPHERIC ABSORPTION**

**STRATIFIED PHENOMENA AT ALTITUDES NOT FEASIBLE FOR BALLOONS AND  
ORBITING SPACECRAFT (HIGH-LATITUDE NOCTILUCENT CLOUDS AT 83 KM)**

**MAGNETIC FIELD-ALIGNED PHENOMENA REQUIRING LARGE ALTITUDE RANGE  
(100 - 1200 KM)**

## **ADDITIONAL UNIQUE OPERATIONAL ASPECTS OF SUBORBITAL SCIENCE**

**HIGH TELEMETRY BIT RATES PROVIDING RAPID SAMPLING OF PHENOMENA ALONG TRAJECTORY**

**COORDINATED PAYLOAD LAUNCHES TO GET COMPREHENSIVE COVERAGE OF MANY ASPECTS OF A PHENOMENON WITH MORE THAN ONE PAYLOAD**

**REAL-TIME SOLAR AND ASTRONOMICAL TARGET SELECTION AND VERIFICATION DURING THE FLIGHT**

**RETRIEVAL OF SPECIALIZED PHOTOGRAPHIC FILM PROVIDING HIGHER SPATIAL RESOLUTION THAN ELECTRONIC IMAGERS.**

## **INTERFACES BETWEEN USER COMMUNITY AND NASA**

**NASA SOUNDING ROCKET WORKING GROUP REPRESENTING ALL SCIENCE DISCIPLINES**

**CONTACT BETWEEN NASA HEADQUARTERS AND COMMUNITY DURING POLICY FORMULATION**

**DIRECT INPUTS ON TECHNICAL NEEDS OF THE USER COMMUNITY**

**REVIEW OF TECHNICAL DEVELOPMENTS OF THE PROGRAM**

**SOUNDING ROCKET AND BALLOON NEWSLETTER PUBLISHED BY OSSA**

**INVESTIGATOR/FIELD CENTER (WALLOPS FLIGHT FACILITY) INTERACTIONS**

**PROJECT INITIATION CONFERENCE**

**PRE-INTEGRATION REVIEW**

**MISSION READINESS REVIEW**

**FAILURE REVIEW, IF NEEDED**